

ABSTRACT OF THE DISCLOSURE

1 An objective is configured with a first partial
2 objective and a second partial objective. The first partial
3 objective, which projects a first field plane onto an
4 intermediate image, has a first, convex mirror and a second,
5 concave mirror. The second partial objective, which projects
6 the intermediate image onto a second field plane, has a third
7 and a fourth mirror, both concave. All of the four mirrors
8 have central mirror apertures. The axial distance between the
9 first and second mirrors is in a ratio between 0.95 and 1.05
10 relative to the distance between the second mirror and the
11 intermediate image. The axial distance Z_{M3-IM} between the third
12 mirror and the second field plane conforms to the relationship

$$13 \quad 0.03 \cdot Du_{M3} + 5.0 \text{ mm} < Z_{M3-IM} < \frac{0.25 \cdot Du_{M3}}{\tan(\arcsin(NA))}.$$

14 NA represents the numerical aperture NA in the second field
15 plane, and Du_{M3} represents the diameter of the third mirror.
16 The objective furthermore has a Petzval radius with an absolute
17 value larger than the distance between the first and second
18 field planes.

(Fig. 1A)